Random Flashing LED

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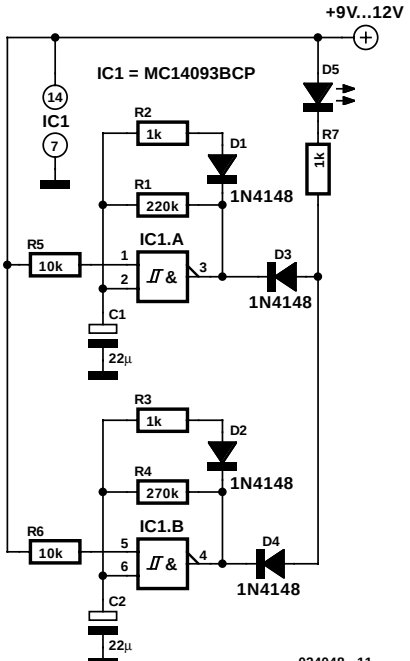
Here is a random flashing LED circuit which is economical at just 1 mA while using a minimum number of parts. With two spare gates available in the 4093 (a 2-input Schmitt trigger NAND), a single IC could separately control two random flashing LEDs. A particular advantage of this design is that both the minimum and maximum periods of the flashes may be adjusted, and in this way the degree of randomness itself.

The circuit as shown randomly flashes LED D5. Gates IC1.A and IC1.B are used to build two conventional oscillators, each of which runs at a relatively low frequency. R2 and R4, with D1 and D2, provide uneven mark-space ratios for the oscillators, so as to produce rapid negative pulses at IC1's output pins 3 and 4. These pulses are mixed through D4 and D3, switching on LED D5 and producing a pseudo-random effect.

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